DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-030062
Date Inspected: 23-Sep-2013

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: William Sherwood

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower Skirt

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At tower base ring beam skirt weld joint #157 east shaft, this QA randomly observed ABF welder Rick Clayborn continuing to perform Partial Joint Penetration (PJP) welding 1” thick plate butt joint. The fit up and alignment was previously checked by ABF QC and verified by QA. The welder was observed butt welding the 1” skirt plate from Y=0 to Y=2500mm in 3G (vertical) position utilizing self shielded Flux Cored Arc Welding (FCAW-S) with 0.072” diameter E71T-8 wire electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-2140-3. Prior welding, the welder was noted preheating the plates to more than 200°F using propylene gas torch. During welding, ABF QC Inspector Tony Sherwood was noted on site monitoring the workmanship and welding parameters of the welder with measured working current of 268 amperes and 21.5 voltage. The welding parameters appear in compliance to the working WPS. During the shift, the welder has welded the root pass, fill pass and cover pass of the weld joint location mentioned above.

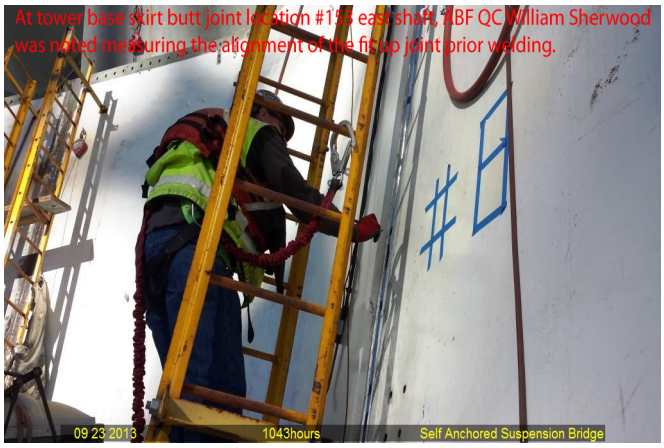
After the completion of the ring beam skirt weld #157 east shaft, the same welder has moved to another skirt weld location #153 east shaft. The welder has ground the weld area to bright metal before ABF QC William Sherwood performed the fit up inspection. During the fit up inspection, QC has noted the alignment less the 2mm but the root opening has exceeded the maximum allowed by the approved WPS. The following root opening measurements were noted;

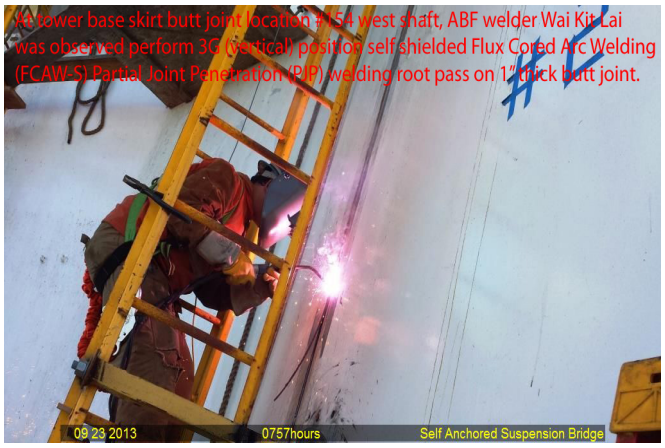
Y-location: Root opening measurements:

Y=0 to Y=380mm 10mm
Y=381 - Y=870mm 11mm
Y=871 - Y=1920mm 10mm
Y=1921 – Y=2470mm 11mm
Y=2471 – Y=3220mm 10mm
Y=3221 – Y=3650mm 9mm
Y=3651 – Y=5479mm 8mm

Since the root opening has exceeded the WPS requirements, a Caltrans approved Request for Information (RFI) #ABF-RFI-003417R02 has allowed ABF to use a backing bar where the root opening was greater than 8mm. ABF personnel were noted installing the backing bar prior welding. This QA randomly observed ABF welder Rick Clayborn continuing to perform Partial Joint Penetration (PJP) welding 1" thick plate butt joint. The fit up and alignment was checked by ABF QC and verified by QA. The root opening measurements were also brought to the attention of ABF Engineers and Caltrans prior to proceed welding. It was later agreed that the areas that exceeded 8mm should be buttered to close the gap then weld the root pass without bridging.

At tower base ring beam skirt weld joint #154 west shaft, this QA randomly observed ABF welder Wai Kit Lai continuing to perform Partial Joint Penetration (PJP) welding 1" thick plate butt joint. The fit up and alignment was previously checked by ABF QC and verified by QA. The welder was observed butt welding the 1" skirt plate from approximately Y=250 to Y=5220mm in 3G (vertical) position utilizing self shielded Flux Cored Arc Welding (FCAW-S) with 0.072" diameter E71T-8 wire electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-2140-3. Prior welding, the welder was noted preheating the plates to more than 200°F using propylene gas torch. During welding, ABF QC Inspector Tony Sherwood was noted on site monitoring the workmanship and welding parameters of the welder with measured working current of 270 amperes and 21.3 voltage. The welding parameters appear in compliance to the working WPS. During the shift, the welder has welded the root pass, fill pass and cover pass of the weld joint location mentioned above.





Summary of Conversations:
No significant conversation occurred today.

WELDING INSPECTION REPORT

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Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Gary Thomas 916-764-6027, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Riley,Ken	QA Reviewer